

## **15A NCAC 02D .2611 SULFUR DIOXIDE TESTING METHODS**

(a) If compliance with a sulfur dioxide emission standard is to be demonstrated for a combustion source through stack sampling, the procedures described in Method 6 or Method 6C to Appendix A of 40 CFR Part 60 shall be used as follows:

- (1) If Method 6 of Appendix A to 40 CFR Part 60 is used to determine compliance, compliance shall be determined by averaging six 20-minute runs without more than 20 minutes elapsing between any two consecutive runs.
- (2) If Method 6C of Appendix A to 40 CFR Part 60 is used to determine compliance, the sampling shall be performed continuously during each run.

(b) Method 8 of Appendix A to 40 CFR Part 60 shall be used to determine compliance with emission standards for sulfuric acid manufacturing plants governed by 15A NCAC 02D .0517 and spodumene ore roasting plants governed by 15A NCAC 02D .0527. Compliance shall be determined by averaging emissions measured from three one-hour test runs, unless otherwise specified in the applicable rule or federal subpart.

(c) For stationary gas turbines, Method 20 of Appendix A to 40 CFR Part 60 shall be used to demonstrate compliance with applicable sulfur dioxide emissions standards.

(d) Fuel burning sources not required to use continuous emissions monitoring to demonstrate compliance with sulfur dioxide emission standards may determine compliance with sulfur dioxide emission standards by stack sampling or by analyzing sulfur content of the fuel.

(e) For a combustion source demonstrating compliance with the sulfur dioxide emission standards by analysis of sulfur in fuel, the sampling, preparation, and analysis of fuels shall be according to the following American Society of Testing and Materials (ASTM) methods. The Director shall approve ASTM methods different from those described in this Paragraph if they will provide equivalent results. The Director shall prescribe alternate ASTM methods on an individual basis if that action is necessary to secure reliable test data.

- (1) For coal sampling, the following methods shall be used:
  - (A) Sampling Location. Coal shall be collected from a location in the handling or processing system that provides a sample representative of the fuel bunkered or burned during a boiler-operating day. For the purpose of this method, a "fuel lot size" is defined as the weight of coal bunkered or consumed during each boiler-operating day. For reporting and calculation purposes, the gross sample shall be identified with the calendar day on which sampling began. The Director shall approve alternate definitions of fuel lot sizes if the alternative will provide a more representative sample.
  - (B) Sample Increment Collection. A coal sampling procedure shall be used that meets the requirements of ASTM D2234 Type I, condition A, B, and C, and systematic spacing for collection of sample increments. All requirements and restrictions regarding increment distribution and sampling device constraints shall be observed.
  - (C) Gross Samples. ASTM D2234 8.1.1.2 Table 2 shall be used except as provided in 8.1.1.5 to determine the number and weight of increments from a composite or gross sample.
  - (D) Preparation. ASTM D2013 shall be used for sample preparation from a composite or gross sample.
  - (E) Gross Caloric Value (GCV). ASTM D5865 shall be used to determine GCV on a dry basis from a composite or gross sample.
  - (F) Moisture Content. ASTM D3173 shall be used to determine moisture from a composite or gross sample.
  - (G) Sulfur Content. ASTM D4239 shall be used to determine the percent sulfur on a dry basis from a composite or gross sample.
- (2) For fuel oil sampling, the following methods shall be used:
  - (A) Sample Collection. A sample shall be collected at the pipeline inlet to the fuel-burning unit after sufficient fuel has been drained from the line to remove all fuel that may have been standing in the line.
  - (B) Heat of Combustion. ASTM Method D240 or D4809 shall be used to determine the heat of combustion. The BTU content of the fuel shall be reported on a dry basis.
  - (C) Sulfur Content. ASTM Method D129 or D1552 shall be used to determine the sulfur content. The sulfur content of the fuel shall be reported on a dry basis.

(f) If the test methods described in Subparagraph (e)(1) or (e)(2) of this Rule are used to demonstrate that the ambient air quality standards for sulfur dioxide set forth in 15A NCAC 02D .0402 are not exceeded, the sulfur content shall be determined at least once per year from a composite of:

- (1) at least three samples over a three-hour period for sources that are most likely to exceed the maximum three-hour ambient standard; or
- (2) at least 24 samples over a 24-hour period for sources that are most likely to exceed the maximum 24-hour ambient standard.

This Paragraph shall not apply to sources that are only using fuel analysis in place of continuous monitoring to meet the requirements of 15A NCAC 02D .0600.

*History Note:* Authority G.S. 143-215.3(a)(1); 143-215.65; 143-215.66; 143-215.107(a)(5);  
Eff. June 1, 2008;  
Readopted Eff. November 1, 2019.